

In the Claims:

A complete listing of all of the claims in the present application is as follows:

1. (Currently Amended) A conductor component for a motor, the motor including a magnet component, the magnet component including a magnet that is surrounded by a magnetic field, the conductor component comprising:

a motor drive conductor array that moves relative to the magnet component and generates a drive magnetic field and a stray magnetic field when electrical current is directed through the motor drive conductor array, the drive magnetic field interacting with the magnetic field of the magnet to generate a reactive force; and

an auxiliary conductor array that moves concurrently with the motor drive conductor array relative to the magnet component and generates an auxiliary magnetic field that interacts with the stray magnetic field and reduces the stray magnetic field.

2. (Original) The conductor component of claim 1 wherein the auxiliary conductor array generates the auxiliary magnetic field when electrical current is directed through the auxiliary conductor array.

3. (Original) The conductor component of claim 1 wherein the auxiliary magnetic field has substantially no influence on the position of the conductor component relative to the magnet component.

4. (Original) The conductor component of claim 1 wherein the auxiliary conductor array substantially encircles the motor drive conductor array.

5. (Currently Amended) The conductor component of claim 4 wherein the auxiliary conductor array includes a plurality of auxiliary coils that each encircle the perimeter of the motor drive conductor array.

6. (Original) The conductor component of claim 4 wherein the motor drive conductor array includes an odd number of poles.

7. (Currently Amended) The conductor component of claim 4 wherein the auxiliary conductor array includes a left transverse segment and a right transverse segment that is spaced apart from the left transverse segment, wherein when a current is directed through the auxiliary conductor array, the left transverse segment generates a force that is substantially equal and ~~oppose~~ opposite to a force generated by the right transverse segment.

8. (Original) The conductor component of claim 1 wherein the auxiliary conductor array includes a pair of spaced apart auxiliary coil sets.

9. (Original) The conductor component of claim 1 wherein the auxiliary conductor array includes an upper longitudinal coil set, a lower longitudinal coil set, a left transverse coil set and a right transverse coil set that cooperate to substantially encircle the perimeter of the motor drive conductor array.

10. (Original) The conductor component of claim 9 wherein the motor drive conductor array includes an even number of poles.

11. (Currently Amended) The conductor component of claim 1 wherein the auxiliary conductor array includes a left transverse coil set and a right transverse coil set and wherein when a current is directed through the left transverse coil set and the right transverse coil set, the left transverse coil set generates a force that is substantially equal and ~~oppose~~ opposite to a force generated by the right transverse coil set.

12. (Original) The conductor component of claim 1 further comprising a conductor housing that retains the motor drive conductor array and the auxiliary conductor array.

13. (Previously Presented) The conductor component of claim 12 wherein the conductor housing includes a conductor section that retains the motor drive conductor array and the auxiliary conductor array.

14. (Original) The conductor component of claim 1 wherein the auxiliary conductor array reduces the stray magnetic field a factor of at least approximately 100.

15. (Original) A linear motor including the conductor component of claim 1 and a magnet component including a magnet that is surrounded by a magnetic field.

16. (Original) The linear motor of claim 15 wherein the magnet component includes a pair of spaced apart magnet arrays and the motor drive conductor component is positioned between the magnet arrays.

17. (Original) The linear motor of claim 16 wherein the auxiliary conductor component is positioned between the magnet arrays.

18. (Original) A stage assembly including the linear motor of claim 15.

19. (Original) An exposure apparatus including the linear motor of claim 15.

20. (Original) An object on which an image has been formed by the exposure apparatus of claim 19.

21. (Original) A semiconductor wafer on which an image has been formed by the exposure apparatus of claim 19.

22. (Original) The exposure apparatus of claim 19 including an illumination source that generates an electronic beam.

23. (Currently Amended) An exposure apparatus comprising a brushless electric motor, the ~~the~~ [[A]] brushless electric motor comprising:

a magnet component including a plurality of magnets, each of the magnets being surrounded by a magnetic field;

a conductor component that includes a motor drive conductor array, the motor drive conductor array generating a drive magnetic field and a stray magnetic field when electrical current is directed through the motor drive conductor array, the drive magnetic field interacting with the magnetic fields of the magnets to generate a reactive force that is used to move one of the components relative to the other component; and

an auxiliary conductor array that generates an auxiliary magnetic field that interacts with the stray magnetic field and reduces the stray magnetic field.

24. (Currently Amended) The exposure apparatus ~~motor~~ of claim 23 wherein the auxiliary conductor array generates the auxiliary magnetic field when electrical current is directed through the auxiliary conductor array.

25. (Currently Amended) The exposure apparatus ~~motor~~ of claim 23 wherein the auxiliary magnetic field has substantially no influence on the position of the conductor component relative to the magnet component.

26. (Currently Amended) The exposure apparatus ~~motor~~ of claim 23 wherein the auxiliary conductor array substantially encircles the motor drive conductor array.

27. (Currently Amended) The exposure apparatus ~~motor~~ of claim 26 wherein the auxiliary conductor array includes a plurality of auxiliary coils that each encircle the motor drive conductor array.

28. (Currently Amended) The exposure apparatus ~~motor~~ of claim 26 wherein the motor drive conductor array includes an odd number of poles.

29. (Currently Amended) The exposure apparatus ~~motor~~ of claim 26 wherein the auxiliary conductor array includes a left transverse segment and a right transverse segment that is spaced apart from the left transverse segment, wherein when a current is directed through the auxiliary conductor array, the left transverse segment generates a force that is substantially equal and ~~oppose~~ opposite to a force generated by the right transverse segment.

30. (Currently Amended) The exposure apparatus ~~motor~~ of claim 23 wherein the auxiliary conductor array includes a pair of spaced apart auxiliary coil sets.

31. (Currently Amended) The exposure apparatus ~~motor~~ of claim 23 wherein the auxiliary conductor array includes an upper longitudinal coil set, a lower longitudinal coil set, a left transverse coil set and a right transverse coil set that cooperate to substantially encircle the motor drive conductor array.

32. (Currently Amended) The exposure apparatus ~~motor~~ of claim 31 wherein the motor drive conductor array includes an even number of poles.

33. (Currently Amended) The exposure apparatus ~~motor~~ of claim 23 wherein the auxiliary conductor array includes a left transverse coil set and a right transverse coil set and wherein when a current is directed through the left transverse coil set and the right transverse coil set, the left transverse coil set generates a force that is substantially equal and ~~oppose~~ opposite to a force generated by the right transverse coil set.

34. (Currently Amended) The exposure apparatus ~~motor~~ of claim 23 wherein the conductor component includes a conductor housing that retains the motor drive conductor array and the auxiliary conductor array positioned near the motor drive conductor array.

35. (Currently Amended) The exposure apparatus ~~motor~~ of claim 34 wherein the conductor housing includes a conductor section that retains the motor drive conductor array and the auxiliary conductor array.

36. (Currently Amended) The exposure apparatus ~~motor~~ of claim 23 wherein the auxiliary conductor array reduces the stray magnetic field a factor of at least approximately 100.

37. (Currently Amended) The exposure apparatus ~~motor~~ of claim 23 wherein the magnet component includes a pair of spaced apart magnet arrays and the motor drive conductor component is positioned between the magnet arrays.

38. (Currently Amended) The exposure apparatus ~~motor~~ of claim 37 wherein the auxiliary conductor component is positioned between the magnet arrays.

39. (Currently Amended) The exposure apparatus of claim 23 further comprising a [[A]] stage assembly including that is moved by the linear motor of claim 23.

40. (Currently Amended) [[An]] The exposure apparatus including the linear motor of claim 23 wherein the motor drive conductor array and the auxiliary conductor array move concurrently relative to the magnet component.

41. (Currently Amended) An object on which an image has been formed by the exposure apparatus of claim [[40]] 23.

42. (Currently Amended) A semiconductor wafer on which an image has been formed by the exposure apparatus of claim [[40]] 23.

43. (Currently Amended) The exposure apparatus of claim [[40]] 23 including an illumination source that generates an electronic beam.

44. (Currently Amended) A method for manufacturing a brushless electric motor, the method comprising the steps of:

providing a magnet component including a plurality of magnets, each of the magnets being surrounded by a magnetic field;

providing a conductor component that includes a motor drive conductor array, the motor drive conductor array moving relative to the magnet component and generating a drive magnetic field and a stray magnetic field when electrical current is directed through the motor drive conductor array, the drive magnetic field interacting with the magnetic fields of the magnets to generate a reactive force that is used to move one of the components relative to the other component; and

providing an auxiliary conductor array that moves concurrently with the motor drive conductor array relative to the magnet component and generates an auxiliary magnetic field that interacts with the stray magnetic field and reduces the stray magnetic field.

45. (Original) The method of claim 44 wherein the step of providing an auxiliary conductor array that generates an auxiliary magnetic field includes the step of directing electrical current through the auxiliary conductor array.

46. (Original) The method of claim 44 wherein the step of providing an auxiliary conductor array includes providing an auxiliary conductor array that substantially encircles the motor drive conductor array.

47. (Currently Amended) The method of claim 44 wherein the step of providing an auxiliary conductor array includes providing an auxiliary coil that includes a left transverse segment and a right transverse segment that is spaced apart from the left transverse segment, wherein when a current is directed through the auxiliary conductor array, the left transverse segment generates a force that is substantially equal and ~~oppose~~ opposite to a force generated by the right transverse segment.

48. (Original) The method of claim 44 wherein the step of providing an auxiliary conductor array includes providing a pair of spaced apart auxiliary coil sets.

49. (Original) The method of claim 44 wherein the step of providing an auxiliary conductor array includes providing an upper longitudinal coil set, a lower longitudinal coil set, a left transverse coil set and a right transverse coil set that cooperate to substantially encircle the motor drive conductor array.

50. (Currently Amended) The method of claim 44 wherein the step of providing an auxiliary conductor array includes providing a left transverse coil set and a right transverse coil set and wherein when a current is directed through the left transverse coil set and the right transverse coil set, the left transverse coil set generates a force that is substantially equal and ~~oppose~~ opposite to a force generated by the right transverse coil set.

51. (Original) The method of claim 44 wherein the step of providing the conductor component includes the step of providing a conductor housing that retains the motor drive conductor array and the auxiliary conductor array positioned near the motor drive conductor array.

52. (Original) The method of claim 44 wherein the step of providing a magnet component includes providing a pair of spaced apart magnet arrays and the motor drive conductor component is positioned between the magnet arrays.

53. (Original) The method of claim 52 including the step of positioning the auxiliary conductor component between the magnet arrays.

54. (Original) A method for manufacturing a stage assembly that moves a stage, the method comprising the steps of providing a motor manufactured by the method of claim 44 and connecting the motor to the stage.

55. (Original) A method for making an exposure apparatus that forms an image formed on a first object on a second object, the method comprising the steps of:
providing an illumination system that illuminates the first object supported by a first stage to form the image on the second object; and
connecting the motor manufactured by the method of claim 44 to the first stage as a driving force for moving the first object.

56. (Original) A method for making a device utilizing the exposure apparatus made by the method of claim 55.

57. (Original) A method for making a semiconductor wafer utilizing the exposure apparatus made by the method of claim 55.

58. (Original) The method of claim 55 wherein the step of providing an illumination system includes the step of providing an illumination source that generates an electronic beam.

59. (Canceled)

60. (New) A conductor component for a motor, the motor including a magnet component, the magnet component including a magnet that is surrounded by a magnetic field, the conductor component comprising:

a motor drive conductor array that generates a drive magnetic field and a stray magnetic field when electrical current is directed through the motor drive conductor array, the drive magnetic field interacting with the magnetic field of the magnet to generate a reactive force; and

an auxiliary conductor array that generates an auxiliary magnetic field that interacts with the stray magnetic field and reduces the stray magnetic field, wherein the auxiliary conductor array substantially encircles the motor drive conductor array.

61. (New) The conductor component of claim 60 wherein the auxiliary conductor array includes a plurality of auxiliary coils that each encircle the perimeter of the motor drive conductor array.

62. (New) The conductor component of claim 60 wherein the motor drive conductor array includes an odd number of poles.

63. (New) The conductor component of claim 60 wherein the auxiliary conductor array includes a left transverse segment and a right transverse segment that is spaced apart from the left transverse segment, wherein when a current is directed through the auxiliary conductor array the left transverse segment generates a force that is substantially equal and opposite to a force generated by the right transverse segment.

64. (New) The conductor component of claim 60 wherein the auxiliary conductor array includes an upper longitudinal coil set, a lower longitudinal coil set, a left transverse coil set and a right transverse coil set that cooperate to substantially encircle the perimeter of the motor drive conductor array.

65. (New) The conductor component of claim 64 wherein the motor drive conductor array includes an even number of poles.

66. (New) A conductor component for a motor, the motor including a magnet component, the magnet component including a magnet that is surrounded by a magnetic field, the conductor component comprising:

a motor drive conductor array that generates a drive magnetic field and a stray magnetic field when electrical current is directed through the motor drive conductor array, the drive magnetic field interacting with the magnetic field of the magnet to generate a reactive force; and

an auxiliary conductor array that generates an auxiliary magnetic field that interacts with the stray magnetic field and reduces the stray magnetic field, wherein the auxiliary conductor array includes a left transverse coil set and a right transverse coil set and wherein when a current is directed through the left transverse coil set and the right transverse coil set, the left transverse coil set generates a force that is substantially equal and opposite to a force generated by the right transverse coil set.

67. (New) A conductor component for a motor, the motor including a magnet component, the magnet component including a magnet that is surrounded by a magnetic field, the conductor component comprising:

a motor drive conductor array that generates a drive magnetic field and a stray magnetic field when electrical current is directed through the motor drive conductor array, the drive magnetic field interacting with the magnetic field of the magnet to generate a reactive force; and

an auxiliary conductor array that generates an auxiliary magnetic field that interacts with the stray magnetic field and reduces the stray magnetic field by a factor of at least approximately 100.

68. (New) A linear motor comprising:

a magnet component including a pair of spaced apart magnet arrays, each of the magnet arrays being surrounded by a magnetic field; and

a conductor component including: (i) a motor drive conductor array positioned between the magnet arrays that generates a drive magnetic field and a stray magnetic field when electrical current is directed through the motor drive conductor array, the drive magnetic field interacting with the magnetic field of the magnet to generate a reactive force; and (ii) an auxiliary conductor array that generates an auxiliary magnetic field that interacts with the stray magnetic field and reduces the stray magnetic field.

69. (New) The linear motor of claim 68 wherein the auxiliary conductor component is positioned between the magnet arrays.

70. (New) An exposure apparatus comprising:

a linear motor including: a magnet component including a magnet that is surrounded by a magnetic field; and a conductor component including: (i) a motor drive conductor array that generates a drive magnetic field and a stray magnetic field when electrical current is directed through the motor drive conductor array, the drive magnetic field interacting with the magnetic field of the magnet to generate a reactive force; and (ii) an auxiliary conductor array that generates an auxiliary magnetic field that interacts with the stray magnetic field and reduces the stray magnetic field.

71. (New) The exposure apparatus of claim 70 including an illumination source that generates an electronic beam.

72. (New) A process for manufacturing a device including the steps of providing a substrate and transferring an image onto the substrate with the exposure apparatus according to claim 70.

73. (New) A process for manufacturing a wafer including the steps of providing a substrate and transferring an image onto the substrate with the exposure apparatus of claim 70.

74. (New) A conductor component for a motor, the motor including a magnet component, the magnet component including a magnet that is surrounded by a magnetic field, the conductor component comprising:

a motor drive conductor array that generates a drive magnetic field and a stray magnetic field when electrical current is directed through the motor drive conductor array, the drive magnetic field interacting with the magnetic field of the magnet to generate a reactive force; and

an auxiliary conductor array that generates an auxiliary magnetic field that interacts with the stray magnetic field and reduces the stray magnetic field, wherein the auxiliary magnetic field has substantially no influence on the position of the conductor component relative to the magnet component.

75. (New) A conductor component for a motor, the motor including a magnet component, the magnet component including a magnet that is surrounded by a magnetic field, the conductor component comprising:

a motor drive conductor array that generates a drive magnetic field and a stray magnetic field when electrical current is directed through the motor drive conductor array, the drive magnetic field interacting with the magnetic field of the magnet to generate a reactive force;

an auxiliary conductor array that generates an auxiliary magnetic field that interacts with the stray magnetic field and reduces the stray magnetic field; and

a conductor housing that retains the motor drive conductor array and the auxiliary conductor array.

76. (New) The conductor component of claim 75 wherein the conductor housing includes a conductor section that retains the motor drive conductor array and the auxiliary conductor array.